

Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Drawings

The drawings have been objected to allegedly for not showing every feature of the invention specified in the claims. According to the Examiner, the drawings fail to show various "steps" recited in the claims.

The requirement to show each claimed feature does not apply to the "steps" of method or process claims. Drawings generally are not necessary for the understanding of the steps recited in a method claim, and certainly this is true in the present case. The steps recited in the instant method claims are adequately described in the specification and no depiction thereof is seen necessary for the understanding of the steps set forth in the claims.

Therefore, withdrawal of the requirement that the drawings show the "steps" recited in the claims is respectfully requested.

The drawings also are objected to because multiple parts allegedly are not labeled with reference numerals. According to the Examiner, Figures 2-5 show a number of constituent parts in the PACS element 30 that are not labeled. To the contrary, various labels are applied to various areas within the PACS element 30, such as C, V, M1-M4, etc., and these labels are utilized in the specification. The addition of another set of reference characters identifying the same elements would be superfluous and do nothing more than clutter the drawings and specification. As for Figure 6, various labels are used to denote elements shown in the figure. The undersigned is not aware of any requirement that these labels be numbers as opposed to letters.

Therefore, withdrawal of the further objections to the drawings is respectfully requested.

Specification

The specification has been objected to because of an alleged uncertainty as to what is meant by "DR" and "CR". As known to those skilled in the art, "DR" stands for "digital radiography" and "CR" stands for "computed radiography." In the context of a description of medical imaging modalities integrated with a PACS network, as on page

10 of the specification, the skilled person would readily understand these common acronyms accordingly.

Claim Rejections - 35 U.S.C. § 112

Claims 1-13 have been rejected as being indefinite.

Regarding the meaning of "model-view-controller", such term is a well-known term in the art, as it has been in use for several decades. As evidence, a brief search on the Internet produces many web pages both using and describing the term. See, for example, the entry in Wikipedia.

Model-view-controller (MVC) is an architectural pattern used in software engineering. Successful use of the pattern isolates business logic from user interface considerations, resulting in an application where it is easier to modify either the visual appearance of the application or the underlying business rules without affecting the other. In MVC, the Model represents the information (the data) of the application and the business rules used to manipulate the data, the View corresponds to elements of the user interface such as text, checkbox items, and so forth, and the Controller manages details involving the communication to the model of user actions such as keystrokes and mouse movements.

Regarding the term "glue bridge" such term is used in the context of a software bridge or software glue, i.e. a software component designed to facilitate communication between two other software components – software that joins or "glues" the components together to bridge communication between them. In the context of the present application, the glue bridge allows communication between the software component and the PACS network, so that the software component may be generic yet still communicate with different PACS networks. See the description on page 18, and Figure 4.

The term "non-standard" in claim 8 is intended to express the fact that different PACS providers tend to implement PACS networks differently. Thus, a PACS network will have "standard" aspects which are common to PACS networks in general, and "non-standard" aspects which are specific to the particular provider or even the particular network. The presence of non-standard aspects can mean that software applications and components, if provided in a generic form, cannot communicate with every PACS network. Therefore, to allow integration into any PACS network, a glue bridge software component is provided to allow integration of the claimed visualization application and software component (claims 1 and 6) into a PACS network, where the

glue bridge accommodates any non-standard aspects. See page 18 of the description, and page 7, lines 12-18.

Regarding the term "operable", the Examiner's contention of indefiniteness is traversed. Nevertheless, the term has been replaced with "configured" throughout the claims so as to render the issue moot.

In addition, claim 5 has been amended to resolve any issue respecting antecedent basis.

In view of the foregoing, withdrawal of the claim rejections under 35 U.S.C. § 112 is respectfully requested.

Claim Rejections - 35 U.S.C. § 101

Regarding the rejections under 35 U.S.C. § 101, claim 1 has been amended into a format more acceptable to U.S. practice. As amended, claim 1 recites "A software component containing a medical-imaging visualization application, the software component comprising computer executable instructions embodied on a computer readable medium that are configured when executed...." The rejection of claims 1-5 under 35 U.S.C. § 101 should now be withdrawn.

Regarding claim 6, exception is taken to the contention that the recited subject matter is nonstatutory. Nevertheless, claim 6 has been amended to recite "A PACS network including a logic device for executing instructions of a" The rejection of claims 6-13 under 35 U.S.C. § 101 should now be withdrawn.

35 U.S.C. § 103

The claims have been rejected as being unpatentable over US 5,875,327 (herein "Brandt") in view of US 6,574,629 (herein "Cooke"). The Examiner's remarks in support of the rejection have been carefully considered, but the rejections are submitted as being improper for at least the following reasons.

According to the Examiner, the features of the independent claims are all found in Brandt except the network being a PACS network and the application being a medical imaging visualization network. The Examiner says these latter features can be found in Cooke. After careful review of Brandt, the Examiner appears to be mistaken and the independent claims recite other features not found in Brandt. This will become apparent from the following discussion.

Applicant describes in his specification a software product and methodology that addresses the problem of how to integrate a computer application program such as a medical imaging visualization application into a PACS network. Typically such applications are provided by a variety of providers and hence each may have a different user interface. These give a non-uniform appearance to the overall network, and also require network users to be familiar with many different interfaces. To address this, PACS network providers may prefer to import only the functionality of the applications, and supplement this with their preferred unitary user interface. This is typically achieved by licensing granular versions of applications. This approach has many difficulties, as explained on pages 3 and 4 of applicant's specification.

To address this, applicant proposes that a visualization application be provided within a software component, where the software component is a model component for use in a model-view-controller architecture. A model component, by definition, provides the fundamental functional aspects of an application. By also providing the software component with an interface having appropriate parameters, the application contained in the software component can be integrated into a PACS network. The parameters are selected to allow this integration. The software component comprises the model component, whereas the view component and the controller component can be located within the PACS network, and built by the PACS provider so as to give the application the provider's preferred user interface. Thus, the PACS provider obtains the functionality of the application, and can integrate it into his network with the desired look of user interface without having to understand the fundamental operation of the application's functionality, because this is contained within the model component, and the view and controller components can be implemented independently of the contents of the model component by use of the parameters of the interface. See page 5, lines 12-25 of the specification for these and other advantages that are attainable.

Independent claim 1 is directed to a software component containing a visualization application, where the software component is a model component, and has an interface with parameters for allowing integration into a PACS network. Brandt has not been found to describe any such software component.

Brandt describes an arrangement for configuring workstations on a network. A plurality of servers are connected to a network, and the network also includes a server. A plurality of preference files are stored on the server with a server preference manager. The preference files indicate configuration preferences for configuring hardware and software according to the preferences of individual users, groups of users, workstations, manufacturers, system administrators, etc. When a user logs onto

a workstation on the network, the preference manager recognizes the user and retrieves the relevant preference files. The preferences are coalesced to a preference set, which is downloaded to the workstation. The workstation then configures itself according to the preference set, and thereby has the configuration according to the preferences of that user (including any group he belongs to, his administrator, etc.).

Presumably, the Examiner is equating the preference files of Brandt with the software component of claim 1. However, the preference files do not contain a medical-imaging visualization application (or indeed any application) as required by claim 1. The preference files merely express preferences for configuration parameters such as screen color, mouse operation, and the like. Also, Brandt has not been found to include any mention whatsoever of a model-view-controller software architecture, and nothing described in Brandt appears to have the features of a model-view-controller software architecture. Hence, the preference files in Brandt are not seen as being operable, or configured, to function as a model component in a model-view-controller software architecture.

Furthermore, the preference files of Brandt do not have an interface having a set of user interface control parameters and a set of data handling parameters, as required by the software component of claim 1. The preference files are not described as having any kind of interface, which is unsurprising since they are merely files which record preferred values for configuration parameters, and do not need to interface with anything. Use of the term "parameter" in Brandt refers to parameters for configuring the hardware and the software, and as best understood not to any interface parameters of the type recited in claim 1. Therefore, the preference files in Brandt do not have an interface having parameters selected for integration of an application into a network (PACS or otherwise). The preference files in Brandt are not in any way similar to the software component of claim 1, and are not intended for use in integrating applications into networks.

The addition of Cooke does not overcome the fundamental deficiencies of Brandt as a teaching reference vis-a-vis claim 1. While Cooke does describe a PACS network with applications for visualizing medical images, a combination of Brandt and Cooke does not result in the subject matter of claim 1. Any reasonable combination of Brandt and Cooke at most would give a PACS network including a server storing preference files such that a workstation would be configured according to the preferences of a user logging onto that workstation, in the manner of the network in Brandt.

Independent claim 6 is directed to a PACS network including a software component having all the features of claim 1. Therefore, claim 6 is also not obvious with regard to Brandt in combination with Cooke, for at least the same reasons as claim 1.

Regarding independent claim 14, the Examiner appears to be equating "a first version of the application contained in a high-level software component" and "a second version of the application contained in a lower-level software component" with preference files at different levels of the hierarchical arrangement of preference files described in Brandt. This is incorrect for several reasons.

Firstly, the preference files in Brandt are, as mentioned above, merely files storing preferred values of configuration parameters. They are not software components containing applications, in particular not software components containing data visualization applications.

Secondly, the "levels" in Brandt (column 9, line 9-14, referenced by the Examiner) refer to the levels in the hierarchical arrangement of the preference files, where administrator preferences are ranked higher than user preferences, for example. In contrast, the terms "high-level software" and "lower-level software" in claim 14 take their usual conventional meaning. There is nothing in the claim or the description to indicate any other interpretation. "Level" in the context of software refers to its position within the functionality of the computer system, with low level referring to programming and processing dealing with the very fundamental inner operation of the computer (and therefore more readily transferable between computer systems) and high level referring to the operations and interactions experienced by and evident to the user (and therefore more specific to an individual system or application). Clearly, these are very different from the hierarchical levels described in Brandt, and Cooke offers little if anything in this context.

The remaining claims are dependent claims, so are not obvious for at least the reasons discussed above. The absence of any specific comment regarding the Examiner's contentions relating to the dependent claims should not be viewed as an acquiescence therein. Rather, no comment is needed since the rejections are deficient at least for the reasons discussed above with respect to the independent claims.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

/Don W. Bulson/

By _____
Don W. Bulson, Reg. No. 28,192

1621 Euclid Avenue
Nineteenth Floor
Cleveland, Ohio 44115
(216) 621-1113

M:\D\YOU\PI\P0253\P0253US-R01.wpd